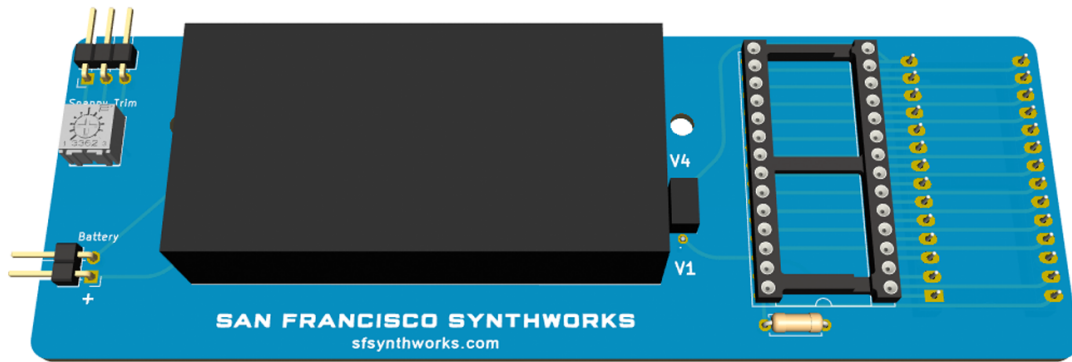


TR-909



DUAL FIRMWARE MOD

SAN FRANCISCO SYNTHWORKS

<https://sfsynthworks.com>

WARNING:

The voltages inside of a TR-909 can kill you.

There is uninsulated "dangerous voltage" within the TR-909's enclosure that is of sufficient magnitude to constitute a risk of electric shock to persons. The modifications described in this document are meant to be performed ONLY by a qualified professional.

Aside from the very real risk of physical harm or death from electrical shock, the PCB's inside the TR-909 are very delicate, and there is a high risk of permanently damaging your TR-909 by performing the modification described in this document.

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This disclaimer of liability applies to any damages or injury, including but not limited to those caused by any failure of performance, error, omission, interruption, deletion, defect, delay in operation or transmission, computer virus, communication line failure, theft or destruction or unauthorized access to, alteration of, or use of record, whether for breach of contract, tortious behavior, negligence or under any other cause of action.

INDEMNIFICATION:

User agrees to defend, indemnify, and hold harmless San Francisco Synthworks LLC and their respective directors, officers, employees, and agents from and against all claims and expenses, including attorneys' fees, arising out of the use of our products.

INSTALLATION:

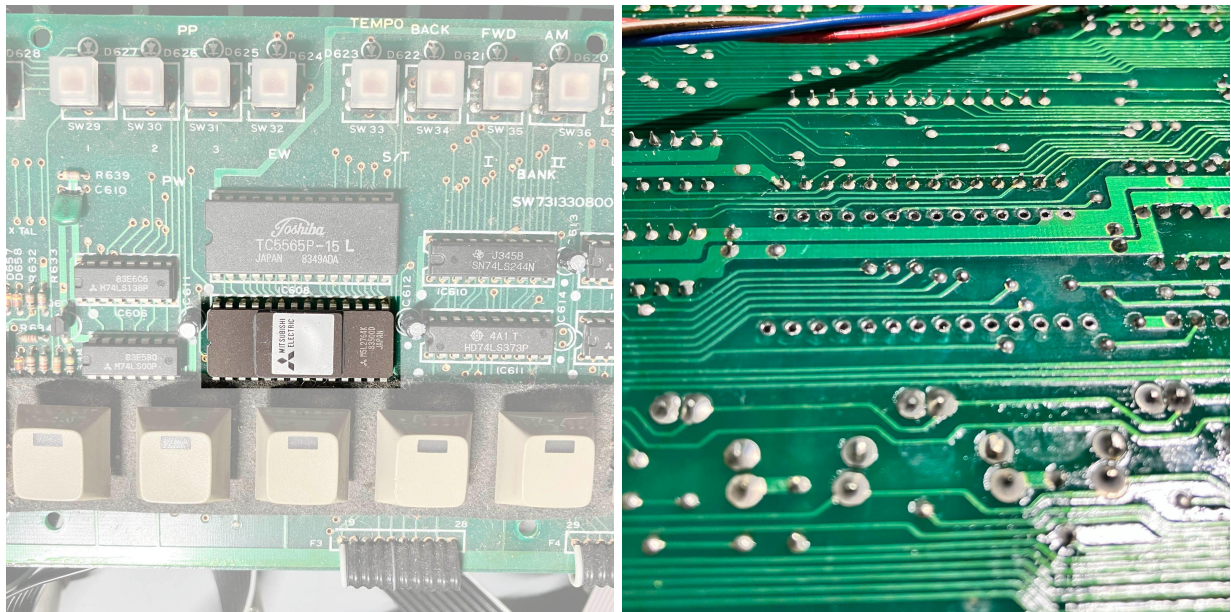
These instructions are for the TR-909 but are identical for any clones and replicas that use the original firmware and CPU. It may be helpful to refer to the official TR-909 service manual if this is your first time inside of one.

1. Turn off your TR-909 and disconnect all cables from it including the power cable.
2. Remove all of the knobs from your TR-909. They should just pull straight up, some may require extra grip than others.
3. Flip your TR-909 over and remove the bottom panel, there are 8 black screws along the outer perimeter - the two that go into the side panels are longer.
4. Make note of how the ribbon cables are connected, and carefully disconnect each of them.
5. Remove the battery compartment and the screws and standoffs holding the voice board in. Carefully place it aside without putting tension on the wires. It may be easier for you to desolder the three power wires going to the center of the voice board depending on your workspace.

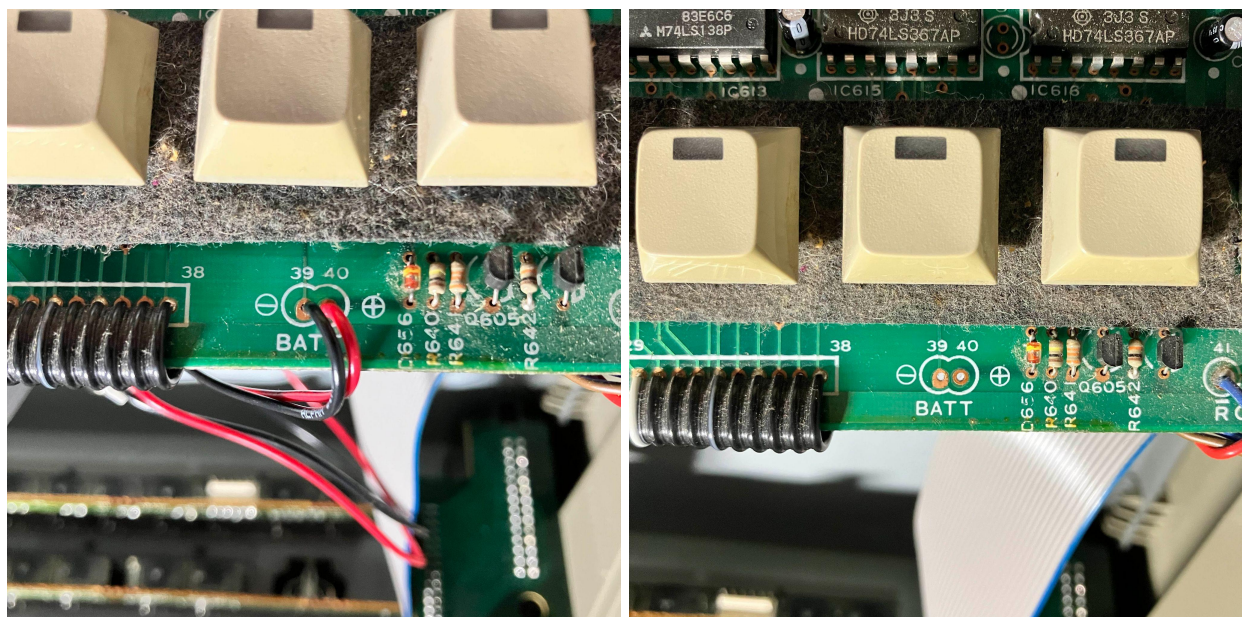


6. Remove the standoffs and screws holding the sequencer board in, and carefully remove it from the enclosure without putting strain on the delicate ribbon cables.

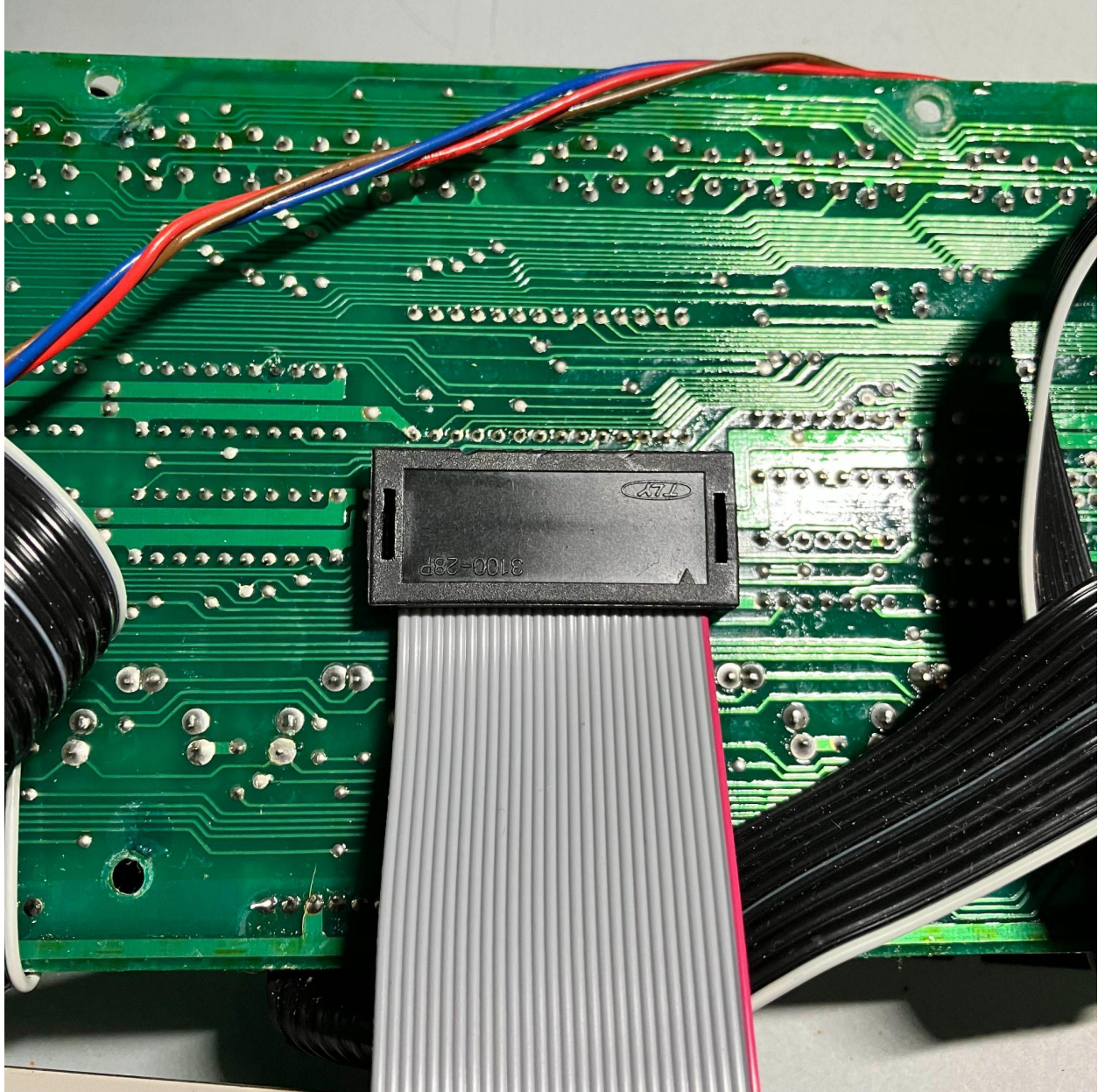
7. Carefully remove the 2764 firmware EPROM from the sequencer board (IC607). We recommend using a professional desoldering tool such as the Hakko FR-301. It is extremely easy to pull traces on these older Roland boards.



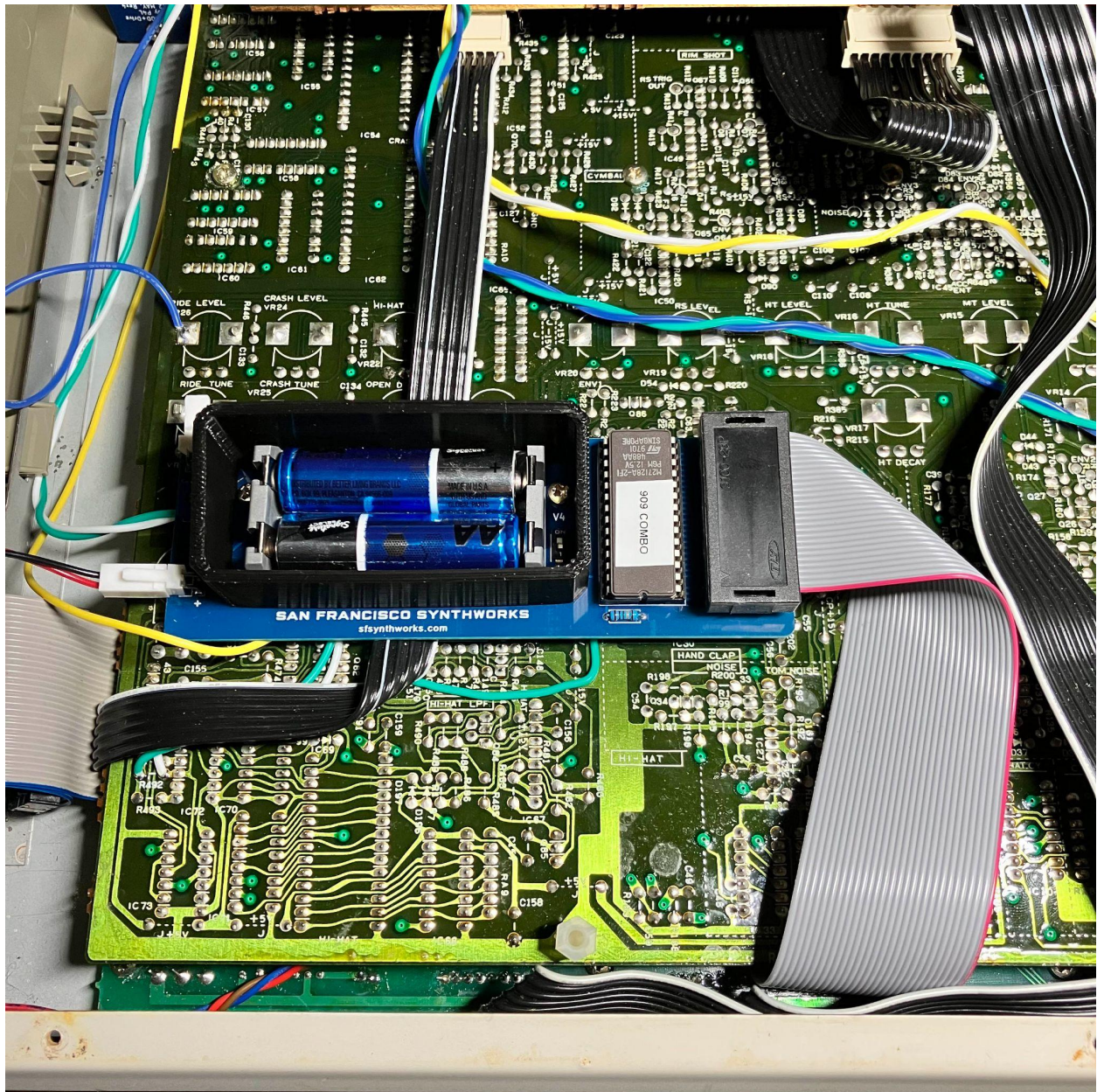
8. Remove the red and black battery holder wires and solder in the new red and black wires with attached header in its place.



9. Install the supplied ribbon cable on the BOTTOM of the sequencer board where IC607 was removed. The red stripe and triangle should be closest to pin 1. The ribbon cable should be routed down towards the side with the step buttons.

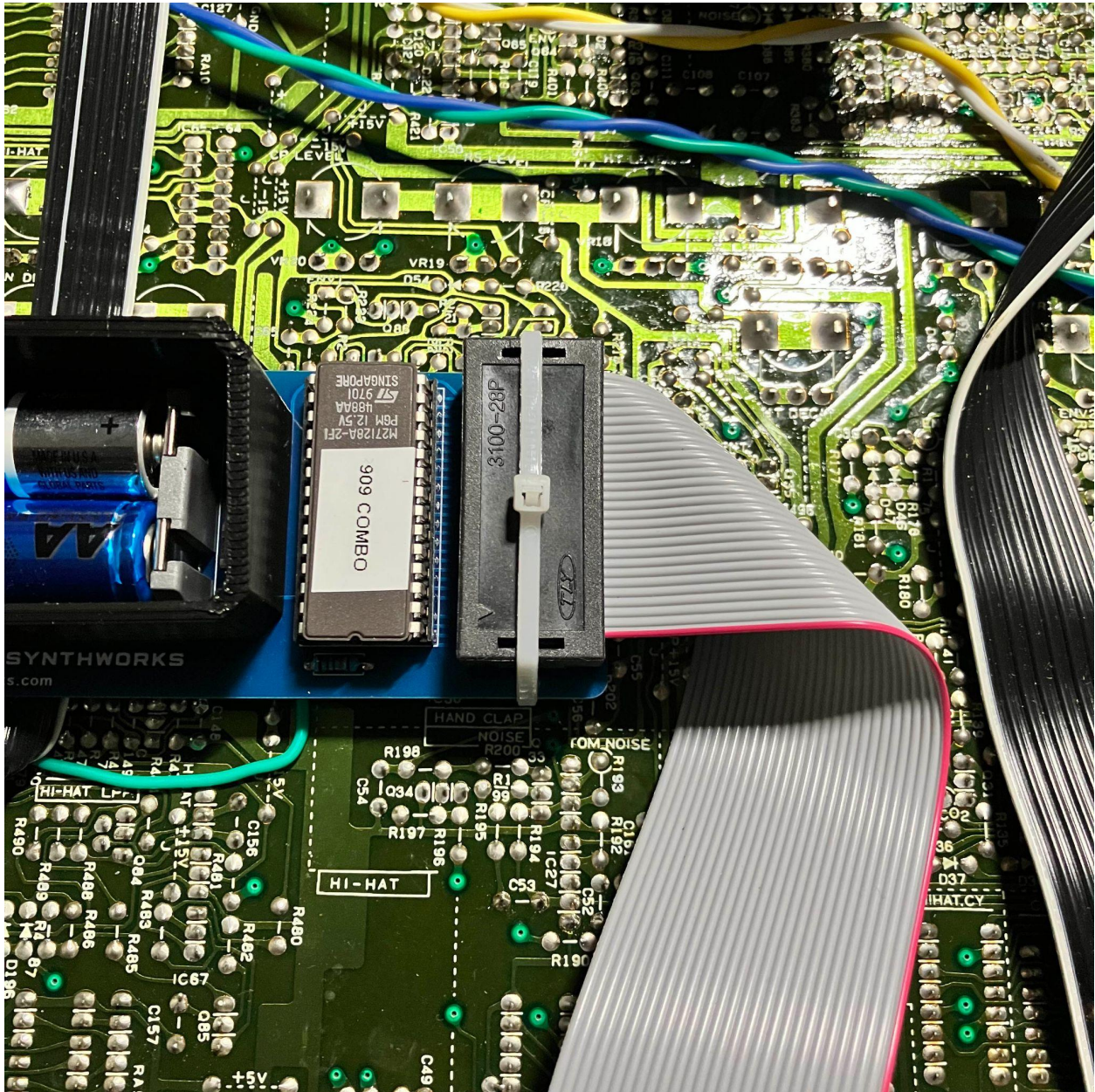


10. Finally, install the new firmware board and battery holder, and attach the ribbon cable and power wires as shown.



11. *Optional:* There is a three prong header with two wires attached to a snappy trimmer on the mod board. This can be wired in place of R294 (voice board) on the TR-909 clones to dial in a more realistic snappy level. This is in place of just swapping that resistor for a higher value.

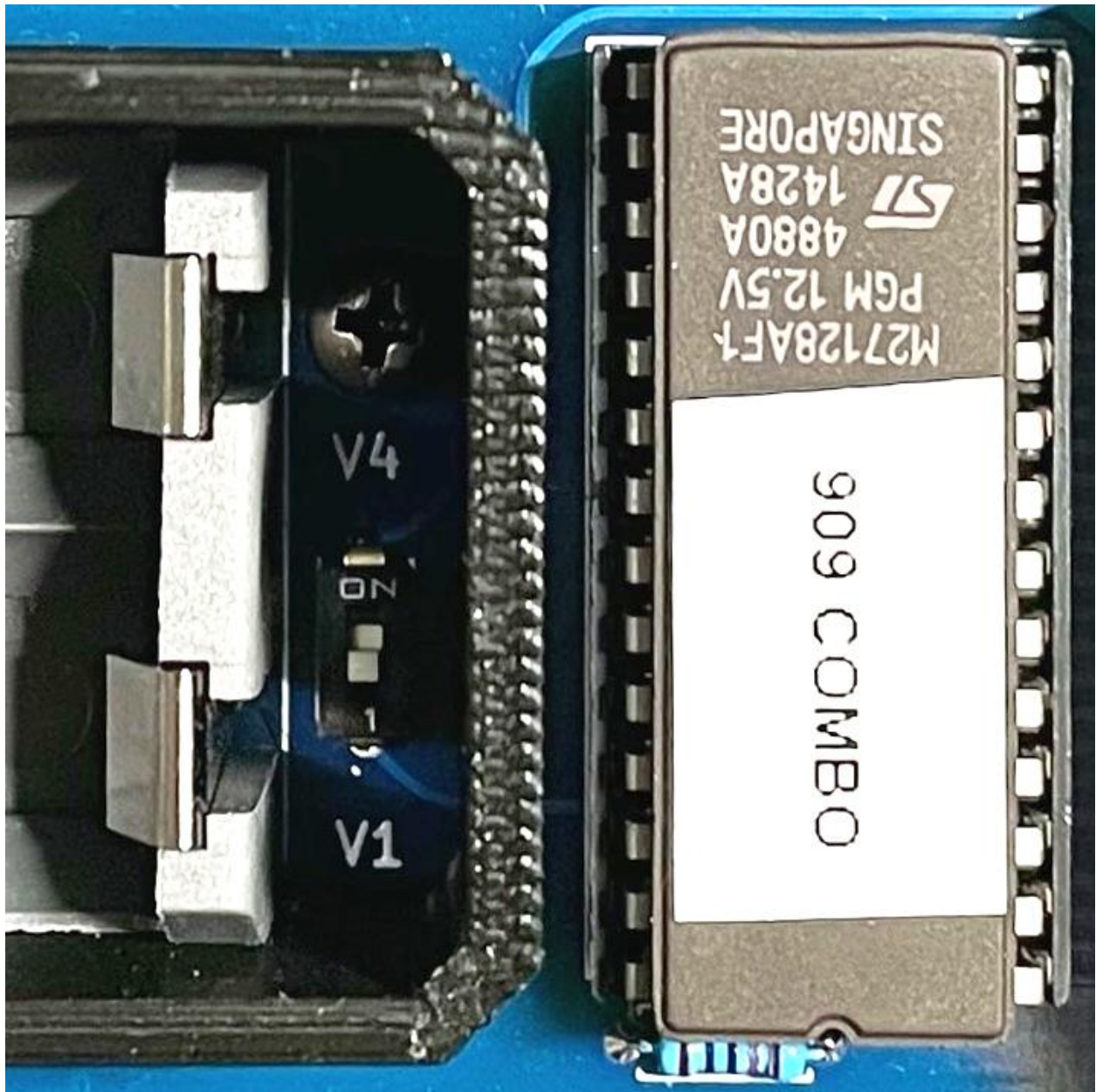
12. You may want to add a zip tie on the ribbon cable if your TR-909 is expected to see a lot of vibration or movement for extra security.



OPERATION:

Operation of this mod is quite simple. Switch the micro switch in the battery compartment up to boot using firmware V4, and down to boot using firmware V1.

Hold track 1 while booting up the TR-909 to confirm which version you are booting with. The corresponding step light will be illuminated.



Thank you!

If you have any questions, please feel free to reach us on instagram [@sfsynthworks](#) or email at contact@sfsynthworks.com

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